

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A spinal prosthesis system, comprising:
 - a caudal prosthesis having a pair of pedicle anchors for coupling to an inferior vertebral body, the caudal prosthesis including an artificial caudal facet joint structure comprising a pair of caudal bearing surfaces;
 - a cephalad prosthesis having a second pair of pedicle anchors for coupling to a superior vertebral body, the cephalad prosthesis including an artificial cephalad facet joint structure comprising a pair of cephalad bearing surfaces; and
 - an artificial facet joint formed between the adjoining vertebral bodies by articulation of the artificial caudal facet joint structure with the artificial cephalad facet joint structure, wherein the artificial caudal facet structure articulates with the artificial facet joint structure in the cephalad and caudal directions and provides medial/lateral angulation.
- 2-26. (Canceled)
27. (Previously Presented) A prosthesis system according to claim 1 wherein at least one of the artificial facet joint structures is made of biocompatible material.
28. (Previously Presented) A prosthesis system according to claim 27 wherein the prosthetic material is selected from one of the following polyethylene, rubber, tantalum, titanium, chrome cobalt, surgical steel, bony in-growth material, ceramic, artificial bone, or a combination thereof.
29. (Canceled)
30. (Previously Presented) A prosthesis system according to claim 1 wherein the pedicle anchors include a screw installed within the vertebral body at or near a pedicle.

31. (Previously Presented) A prosthesis system according to claim 1 wherein the pedicle anchors include a stem installed within the vertebral body at or near a pedicle.

32. (Previously Presented) A prosthesis system according to claim 1 wherein the pedicle anchors include means for resisting rotation after installation in the vertebral body.

33. (Original) A prosthesis system according to claim 1 wherein at least one of the caudal and cephalad prosthesis is fixed to the vertebral body by an adhesive or cement.

34. (Original) A prosthesis system according to claim 1 wherein at least one of the caudal and cephalad prosthesis includes a bony in-growth material.

35 -38. (Canceled)

39. (Withdrawn) A method of replacing a natural facet joint between adjoining inferior and superior vertebral bodies using the prosthesis system defined in claim 1 to provide improved support for the spinal column, the method comprising the steps of

- (i) removing from the inferior vertebral body all or a portion of a caudal portion of the natural facet joint,
- (ii) removing from the superior vertebral body all or a portion of a cephalad portion of the natural facet joint,
- (iii) fixing the caudal prosthesis as defined in claim 1 to the inferior vertebral body to replace the removed caudal portion of the natural facet joint with the artificial caudal facet joint structure,
- (iv) fixing the cephalad prosthesis as defined in claim 1 to the superior vertebral body to replace the removed cephalad portion of the natural facet joint with the artificial cephalad facet joint structure, and
- (v) affecting articulation between the artificial caudal facet joint structure and the artificial cephalad facet joint structure to create an artificial facet joint between the

adjoining vertebral bodies.

40. (Withdrawn) A method according to claim 39 further including a step of removing at least some of the lamina from the inferior vertebral body.

41. (Withdrawn) A method according to claim 39 further including a step of removing at least part of a mamillary process from the inferior vertebral body.

42. (Withdrawn) A method according to claim 39 further including a step of removing at least part of a transverse process from the inferior vertebral body.

43. (Withdrawn) A method according to claim 39 further including a step of removing at least part of a pedicle from the inferior vertebral body.

44. (Withdrawn) A method according to claim 39 further including a step of removing at least part of an accessory process from the superior vertebral body.

45. (Withdrawn) A method according to claim 39 further including a step of removing at least part of a transverse process from the superior vertebral body.

46. (Withdrawn) A method according to claim 39 further including a step of removing at least part of a pedicle from the superior vertebral body.